IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 10/510,567	Confirmation No.	: 9020
First Named Inventor	: Hirohisa MIYAZAWA		
Filed	: October 8, 2004		
TC/A.U.	: 2841		
Examiner	: TUAN T. DINH		
Docket No.	: 029267.55488US		
Customer No.	: 23911		
Title	: Circuit Board Device for Information Apparatus, Multilayered Module Board and Navigation System		

REPLY AFTER FINAL UNDER 37 C.F.R. §1.116

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action dated October 18, 2007, reconsideration and allowance of the above-identified application are respectfully requested. Claims 1, 3 and 5-10 remain pending.

Claims 1 and 5 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,477,593 to Khosrowpour et al. ("Khosrowpour"). This ground of rejection is respectfully traversed.

Prior to addressing this ground of rejection in detail, a brief summary of the disclosed invention is provided in order to highlight advantageous characteristics thereof.

Exemplary embodiments of the disclosed invention are directed to a circuit board structure that can be used in applications such as vehicle information

system with navigation functionality. As discussed on pages 2, lines 8-19 of the present application, navigation specifications vary between different vehicle models, and the navigation circuit board must be designed and manufactured in conformance with the different specifications. This requires a great amount of time in the design stage, which results in high production costs.

Exemplary embodiments of the present invention overcome the above-identified and other deficiencies of conventional circuit board structures by providing circuit board device that includes a base board and one of three types of multilayer module boards that can be mounted on the base board. These multilayer module boards can be one of a low-end module board, a high-speed module board and an advance function module board. This arrangement allows navigation systems with various functions to be manufactured easily, and reduces production costs. Specifically, this arrangement eliminates the need to design and manufacture a circuit board for each set of specifications from scratch, which reduces costs by reducing the length of time spent in the development stage.

Turning now to the claims, Khosrowpour does not anticipate Applicant's claim 1 because Khosrowpour does not disclose a multilayer module board mounted on a base board, where the multilayer module board is one of a low-end module board, a high-speed module board or an advanced function module board.

Furthermore, Khosrowpour does not disclose a multilayer module board that includes at least a CPU and a memory.

The rejection of claim 1 relies upon daughterboard 120 of Khosrowpour as disclosing the claimed multilayer board. Apart from describing the bus interface circuits and the composition of the boards themselves, Khosrowpour does not describe the type of function performed by daughterboard 120. Accordingly, Khosrowpour does not disclose that daughterboard 120 is one of a low-end module board, a high-speed module board or an advanced function module board. Nor does Khosrowpour disclose that motherboard 110 can accept more than one different type of board. In contrast, the base board of Applicant's claim 1 can accept a number of different types of multilayer module boards.

Khosrowpour also does not disclose that daughterboard 120 is a multilayer board. The rejection of claim 1 acknowledges that Khosrowpour does not explicitly disclose that daughterboard 120 is a multilayer board. Instead, the Office Action states that daughterboard 120 is inherently a multilayer board, and cites U.S. Patent No. 5,025,306 to Johnson et al ("Johnson") to support this position on inherency.

Inherency requires that

> the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in

> the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient."[1]

Accordingly, in order to support the inherency position of the Office Action, Johnson must make clear that *all daughterboards must be multilayer boards*. It is not enough for Johnson to merely disclose that one type of daughterboard can be a multilayer board. Johnson, however, does not disclose that *all daughterboards must be multilayer boards*. Because the Patent Office has not provided any evidence that *all daughterboards must be multilayer boards*, the Patent Office has not provided sufficient evidence to establish that the particular daughterboards of Khosrowpour *must be multilayer boards*.

Moreover, Khosrowpour does not disclose that daughterboard includes at least a CPU and a memory, as does the multilayer module board of Applicant's claim 1. The Response to Arguments section of the Office Action states that Figure 1 of Khosrowpour illustrates that daughterboard 120 includes a bigger chip, that corresponds to the claimed CPU, and three chips near the bigger chip that correspond to the claimed memory. Khosrowpour does not, however, describe the chips mounted on daughterboard 120, and there is nothing in the disclosure of Khosrowpour that would lead one of ordinary skill in the art to conclude that the bigger chip *must* be a CPU, or that the three other chips *must*

[1] M.P.E.P. § 2112, citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

be memories. Accordingly, the rejection of Applicant's claim 1 has presented no evidence to establish that Khosrowpour explicitly or inherently discloses that daughterboard 120 includes a CPU and memory.

Claim 5 is patentably distinguishable over Khosrowpour at least by virtue of its dependency from claim 1.

For at least those reasons stated above, it is respectfully requested that the rejection of claims 1 and 5 as being anticipated by Khosrowpour be withdrawn.

Claim 3 is rejected under 35 U.S.C. § 103(a) as being obvious in view of the combination of Khosrowpour and U.S. Patent No. 6,085,137 to Aruga et al. ("Aruga"). This ground of rejection is respectfully traversed.

Claim 3 depends from claim 1. As discussed above, Khosrowpour does not disclose all of the elements of Applicant's claim 1. It is respectfully submitted that Aruga does not remedy the above-identified deficiencies of Khosrowpour. Accordingly, the combination of Khosrowpour and Aruga cannot render claim 3, which depends from claim 1, obvious.

For at least those reasons stated above, it is respectfully requested that the rejection of claim 3 as being obvious in view of the combination of Khosrowpour and Aruga be withdrawn.

Claims 6-10 are rejected under 35 U.S.C. § 103(a) as being obvious in view of the combination of Khosrowpour and U.S. Patent No. 5,346,402 to Yasuho et al. ("Yasuho"). This ground of rejection is respectfully traversed.

Claims 6-8 variously depend from claim 1. As discussed above, Khosrowpour does not disclose all of the elements of Applicant's claim 1. It is respectfully submitted that Yasuho does not remedy the above-identified deficiencies of Khosrowpour. Accordingly, the combination of Khosrowpour and Yasuho cannot render claims 6-8, which depend from claim 1, obvious.

Dependent claim 7 and independent claim 9 both recite four connector terminals that "are each carried with the base portion attached to a transfer adapter and the four connector terminals are connected through soldering onto a rear surface of the board while attached to the transfer adapter." The Office Action relies upon Yasuho as disclosing this claim element. The Office Action, however, does not indicate where a disclosure of the claimed four connector terminals can be found in Yasuho. Accordingly, if this ground of rejection is maintained, Applicant respectfully requests that the next communication from the Patent Office identify, by column and line number, where Yasuho discloses the claimed four connector terminals. Because Khosrowpour and Yasuho both do not disclose or suggest the claimed four connector terminals, the combination does not render claims 7 and 9 obvious.

Dependent claim 8 and independent claim 10 both recite

> the four connector terminals each include
>
> ***
>
> aligning pins projecting at both ends of the base portion to be used when soldering the connector terminal onto a rear surface of the board; and
>
> ***
>
> a pair of positioning holes at which the aligning pins are loosely fitted are formed at each of four corners of the board; and

The Office Action relies upon Yasuho as disclosing the four connector terminals including aligning pins and the pair of positioning holes. The Office Action, however, does not indicate where a disclosure of the claimed four connector terminals and pair of positioning holes can be found in Yasuho. Accordingly, if this ground of rejection is maintained, Applicant respectfully requests that the next communication from the Patent Office identify, by column and line number, where Yasuho discloses the claimed four connector terminals and pair of positioning holes. Because Khosrowpour and Yasuho both do not disclose or suggest the claimed four connector terminals or pair of positioning holes, the combination does not render claims 8 and 10 obvious.

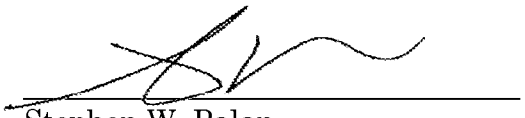
For at least those reasons stated above, it is respectfully requested that the rejection of claims 6-10 as being obvious in view of the combination of Khosrowpour and Yasuho be withdrawn.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 029267.55488US).

Respectfully submitted,

January 17, 2008



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